A Sustainable Energy Future
&
IAEA Support

Ayhan Evrensel
Communication Adviser
Department of Nuclear Energy

Conference on the
Nuclear Option for Southeast Europe
6 May 2015
Bucharest, Romania

IAEA

IAEA Statute

"…accelerate & enlarge contribution of atomic energy to peace, health and prosperity…"

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SE4ALL

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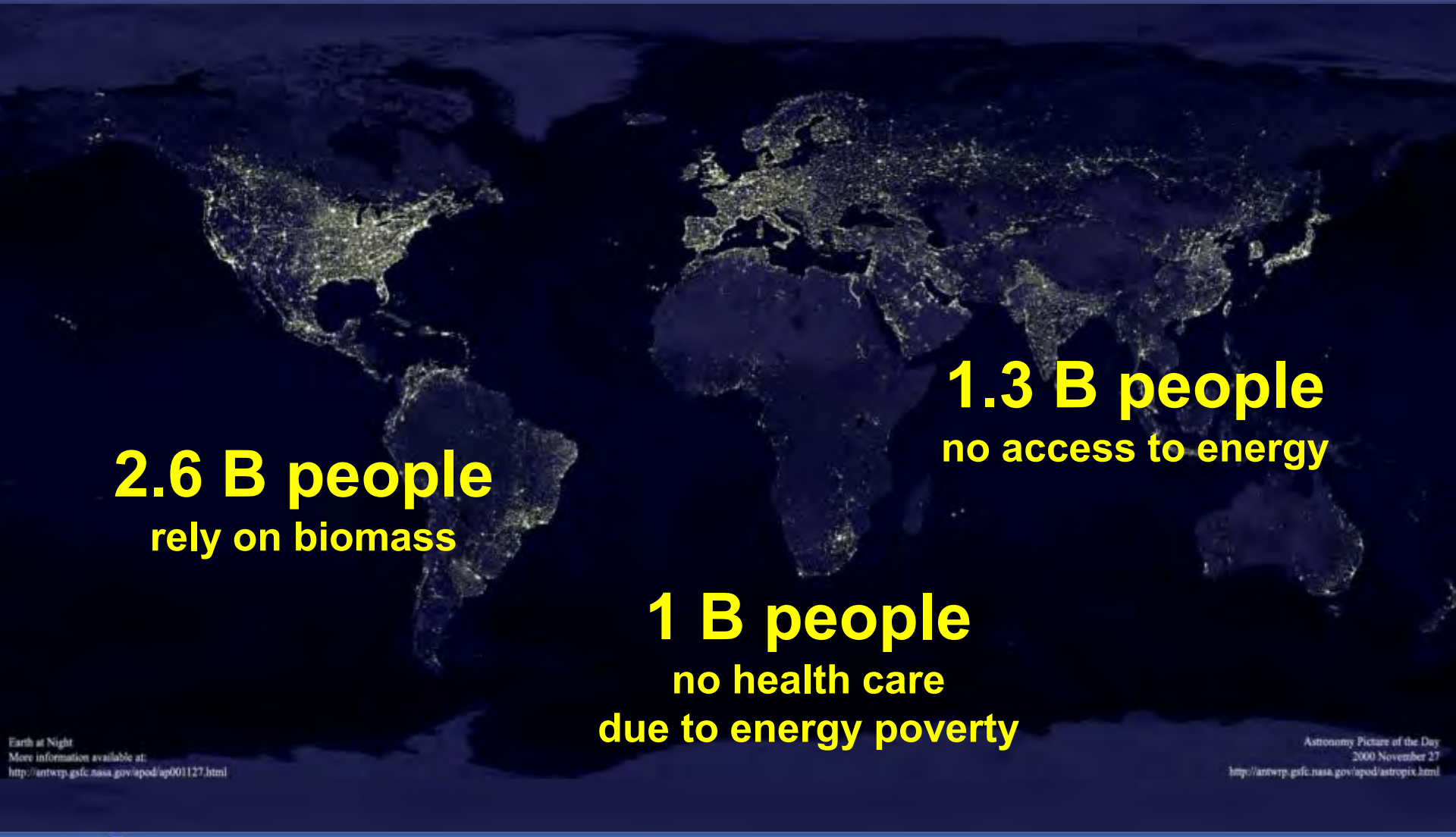
Energy 2015



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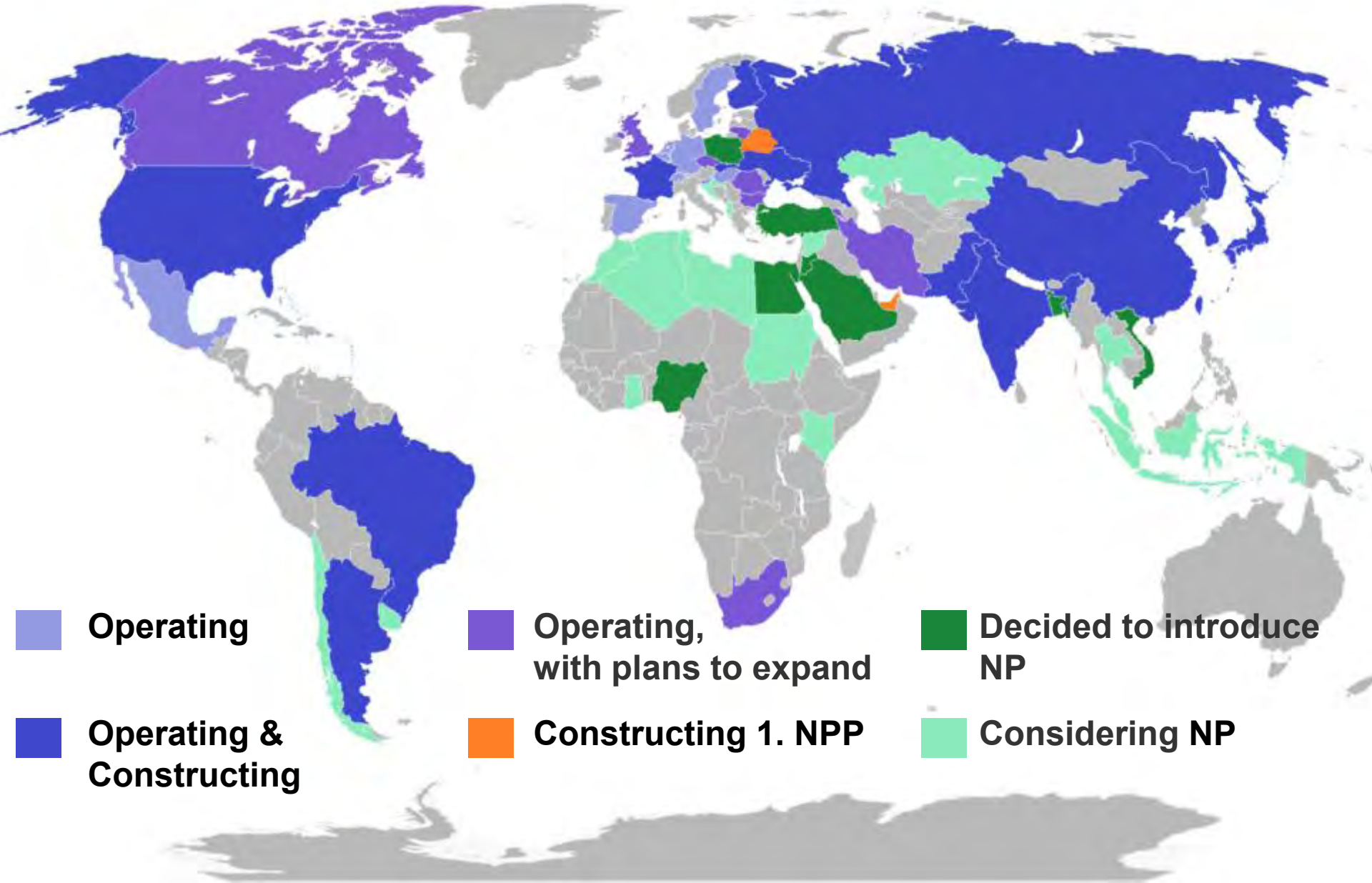
Nuclear Energy 2015



Nuclear power reactors

(5 May 2015)

443 in operation = 11% of world electricity

66 under construction

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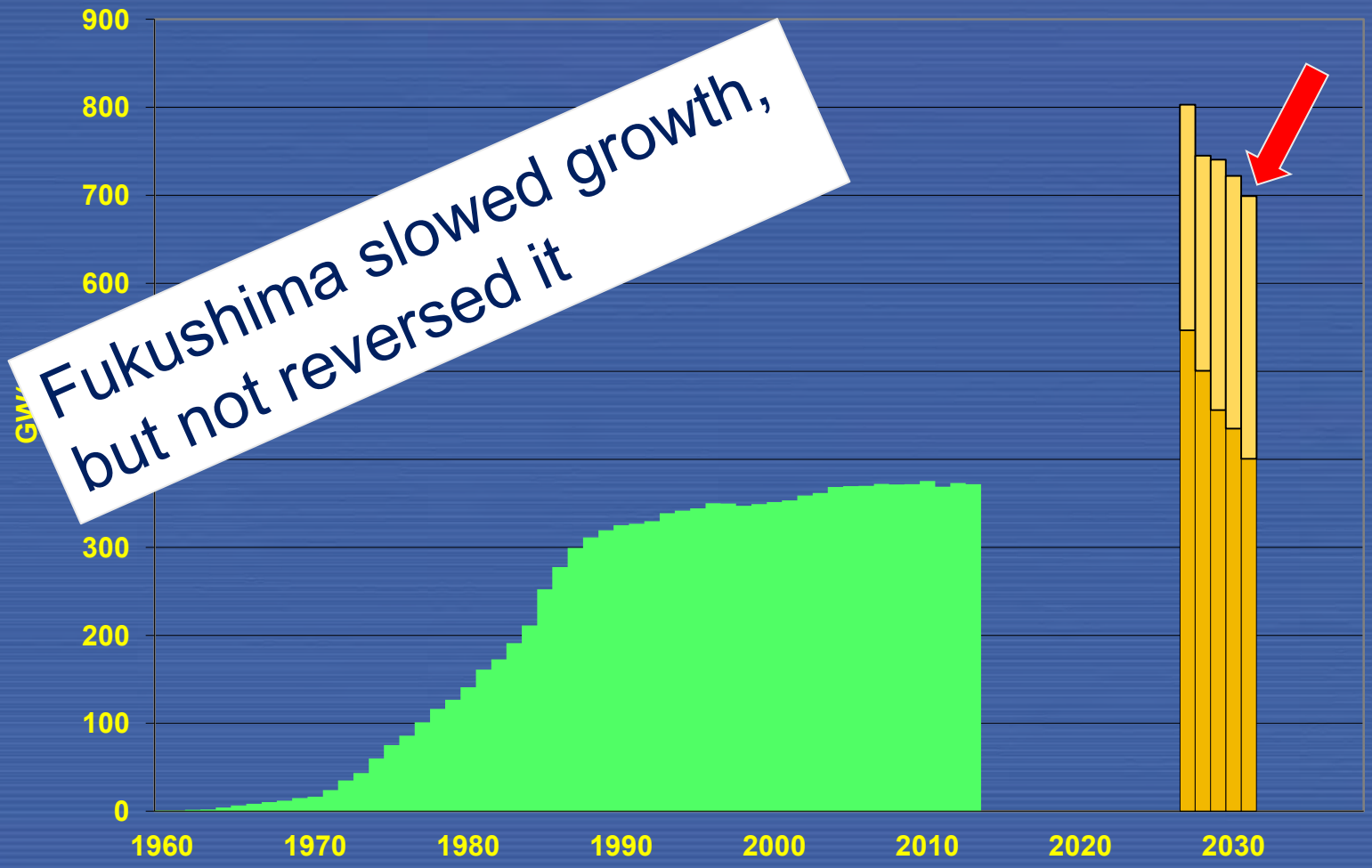
Projections



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International Ministerial Conference: Nuclear Power in the 21st Century

- Despite Fukushima, NP still an important option (energy security, fossil fuel prices, climate change)
- NP complements other sources, incl. renewables
- Interest in launching or expanding NP programmes

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Why Climate Change?

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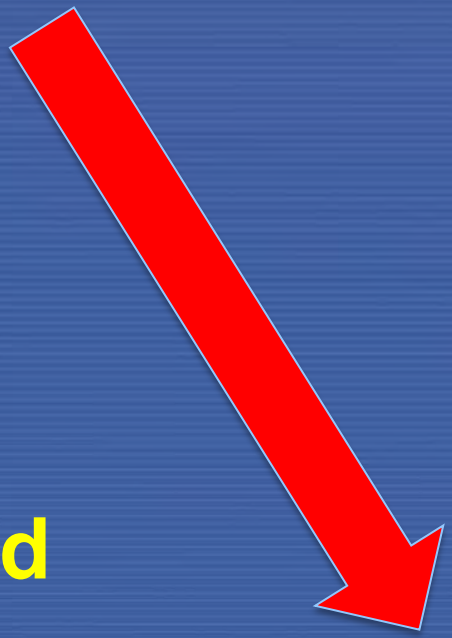
Energy challenge

population

life style

energy demand



Anthropogenic Climate Change

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Life cycle GHG emissions

LOWEST

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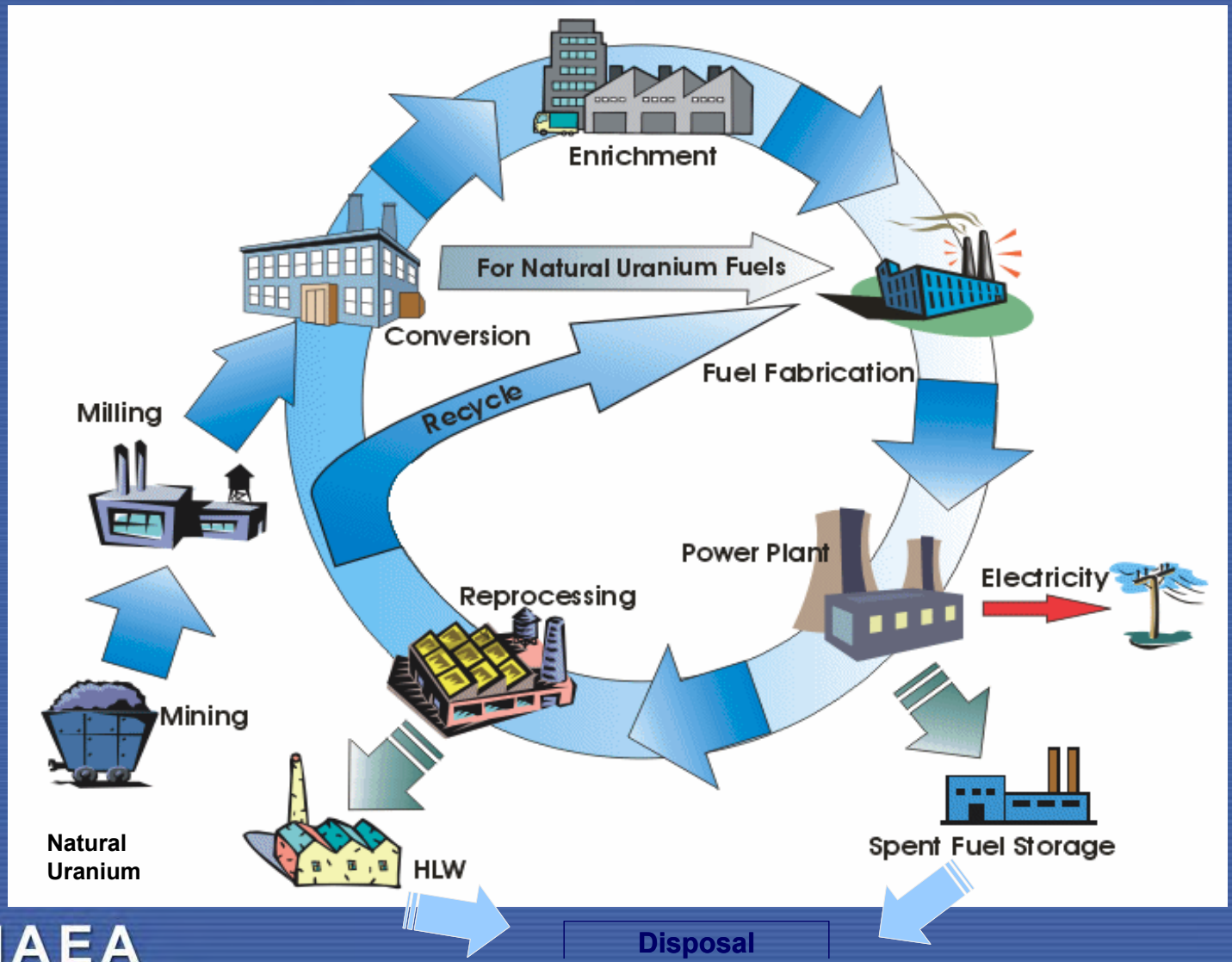
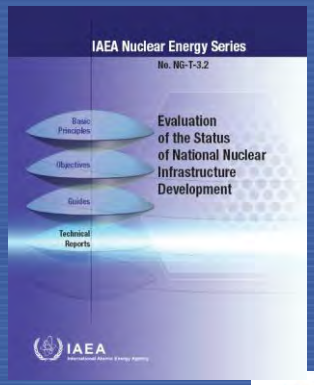
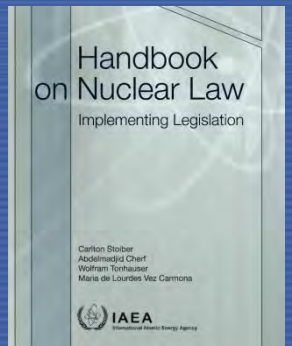
Nuclear fuel cycle

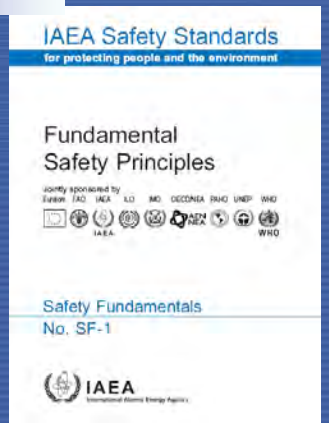


IAEA services & products

- Peer reviews
- Databanks
- Summaries of experience, new knowledge, best practices
- Training, distance learning
- Standards, guidelines
- Technical ref. documents
- Research coordination







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Uranium exploration & mining

MEGATEM, Dash 7

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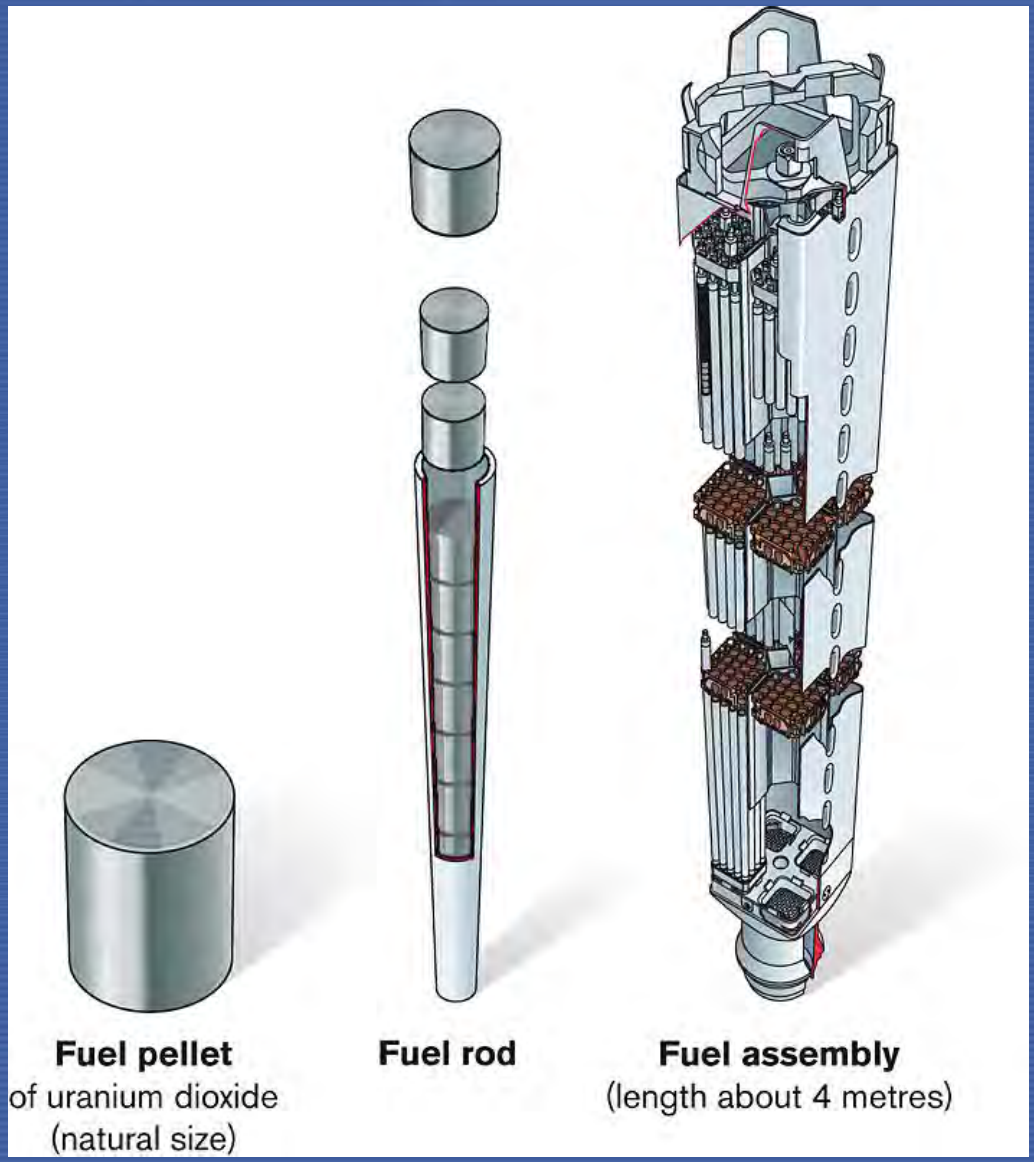
Fuel fabrication & engineering



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Integrated Services for developing Nuclear Power Programmes

Energy planning: optimizes the mix	→	Decide: Nuclear power an option?
Milestones: supports 1st NPP project	→	Comprehensive, phased planning
Nuclear Energy Systems Assessment	→	Sustainable in long term?

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Newcomers: Milestones Approach

MILESTONE 1

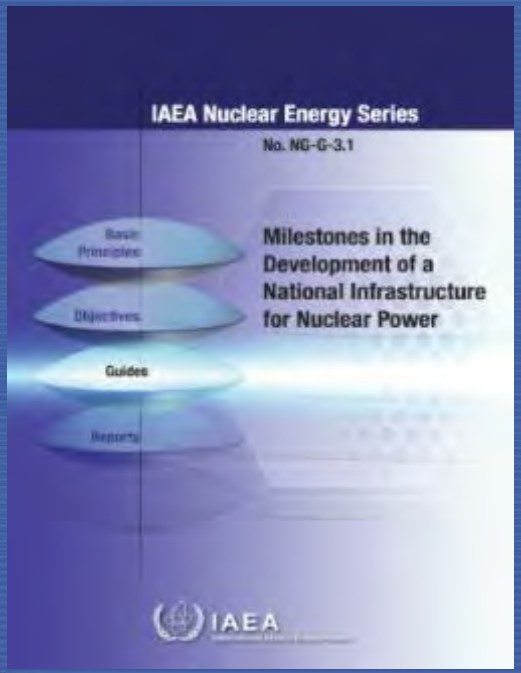
Ready to make a knowledgeable commitment to a nuclear programme

MILESTONE 2

Ready to invite bids for the first nuclear power plant

MILESTONE 3

Ready to commission and operate the first nuclear power plant



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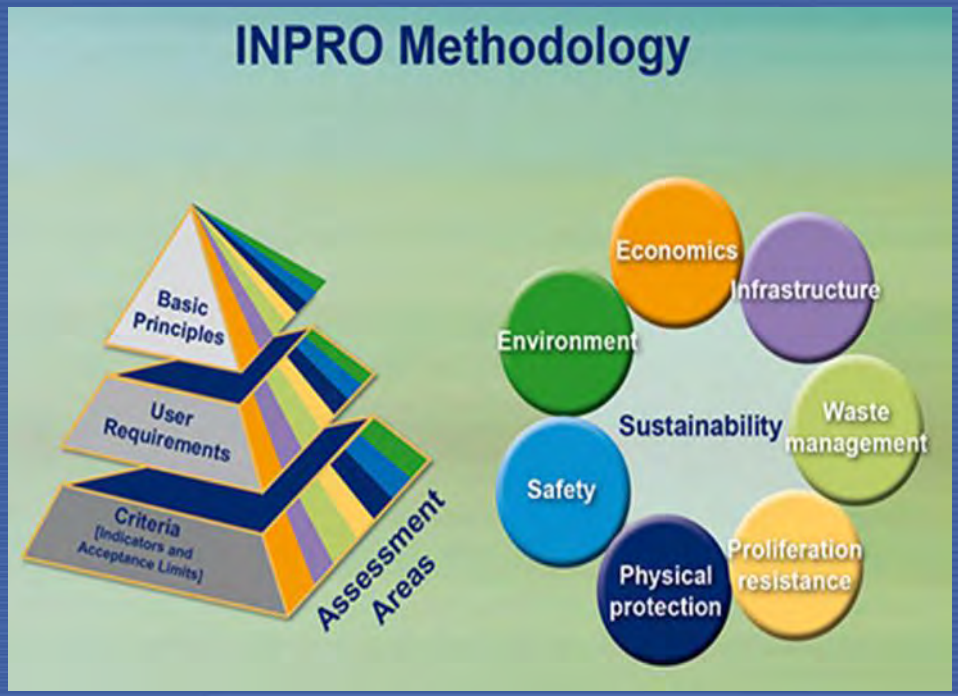
Nuclear Energy System Assessments (NESAs)

Strategic view for future

Critical issues?

Close gaps

Advantages?



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Support for operators

Instrumentation & control

Plant life management

maintenance/ outage management

Fukushima lessons

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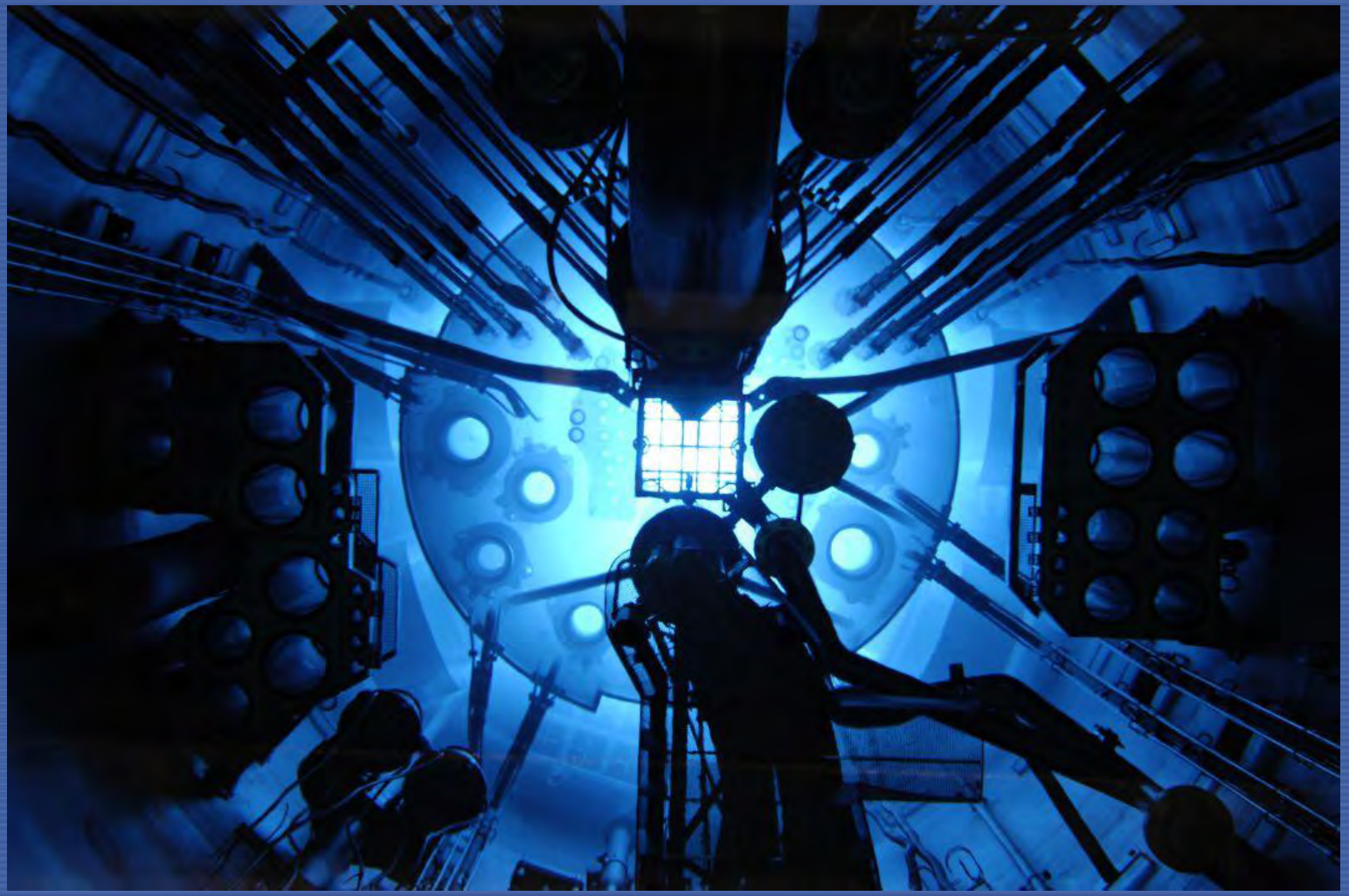
Research reactors



IAEA support in Nuclear Knowledge Management

IAEA Support

IAEA Support

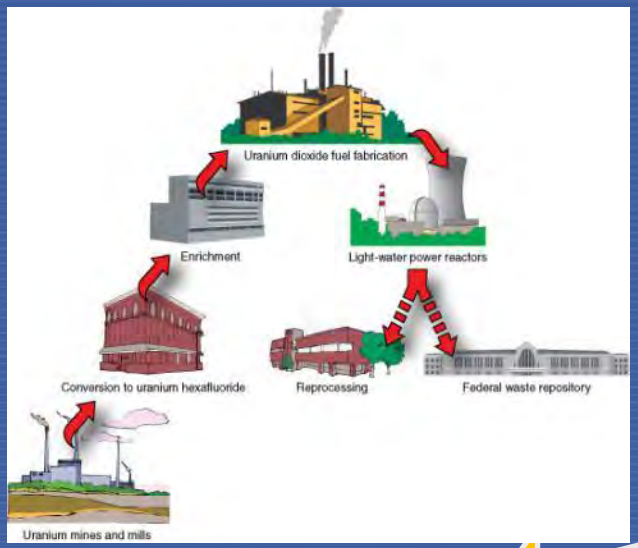
Decommissioning

R&D

Refurbishment

Design, Manufacturing, Construction

Operation & Maintenance



Nuclear Education

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Spent fuel

Spent fuel pool

Dry storage casks

Dry storage building

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Disposal

Final covering of LLW disposal facility
Centre de la Manche, France

Deep underground disposal facility
for spent fuel Onkalo, Finland

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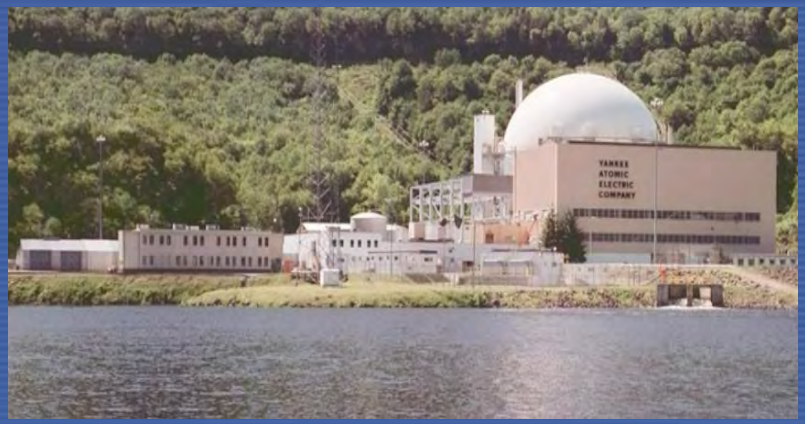
Decommissioning

Maine Yankee being dismantled, USA

Yankee Rowe NPP



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‘Orphan’ sources

Fuel Cycle and Waste Newsletter, Volume 9, Number 1, March 2013

IAEA helps Honduras condition over 100 disused sealed sources

has been working to improve safety and
ditions in Member States by assessing
f sealed radioactive sources and performing
d radioactive source (DSRS) conditioning and
ects. Recently, Honduras has requested IAEA
r the safe management of its DSRS. The
gement Unit (SMU) of the Waste Technology
e IAEA Department of Nuclear Energy has
onths assisted Honduras in this endeavour.

24 DSRSs have been recovered between June
ril 2012 from different premises and safely

g DSRS prior to

Fig.2: Measuring dose rate
container containing the en
radioactive source

Strengthening Control of Radioactive

Fuel Cycle and Waste Newsletter, Volume 9, Number 2, September 2013

Managing Radioactive Sources

IAEA trains operators in Egypt, recovers source in Sierra Leone

Radioactive sources are widely used for beneficial purposes every day – in industry, medicine, agriculture and research. However, sources that fall outside effective control pose safety and security risks. To protect the public from the hazards of ionizing radiation, “cradle-to-grave” control of radioactive sources is essential.

The IAEA helps its Member States to increase their own capacity to manage disused sealed radioactive sources (DSRS). A May 2013 training workshop in Egypt focused on pre-treatment, or conditioning, for the safe disposal of radium-226 and other DSRS. The workshop was held under an interregional technical cooperation project (INT9176, Strengthening Cradle-to-Grave Control of Radioactive Sources in the Mediterranean Region), and was organized in collaboration with the Egyptian Atomic Energy Authority (EAEA), with the support from the European Union.

The lectures on cradle-to-grave DSRS management were followed by four days of hands-on practical training on preparing and conducting conditioning operations. In one task, the participants conditioned 12 brachytherapy radium needles with a total activity of 18 mCi (670 MBq) into one capsule, demonstrating their capabilities to conduct such operations. Brachytherapy is an effective method of treatment for cervical, prostate, breast, skin cancer and other kinds of tumors.

In the absence of an appropriate lead container, the source was placed in an “internal container” that was engineered with available materials and with layers of lead. (Photo: IAEA)

Proper labels were put on the final container. (Photo: NSRPA Sierra Leone)

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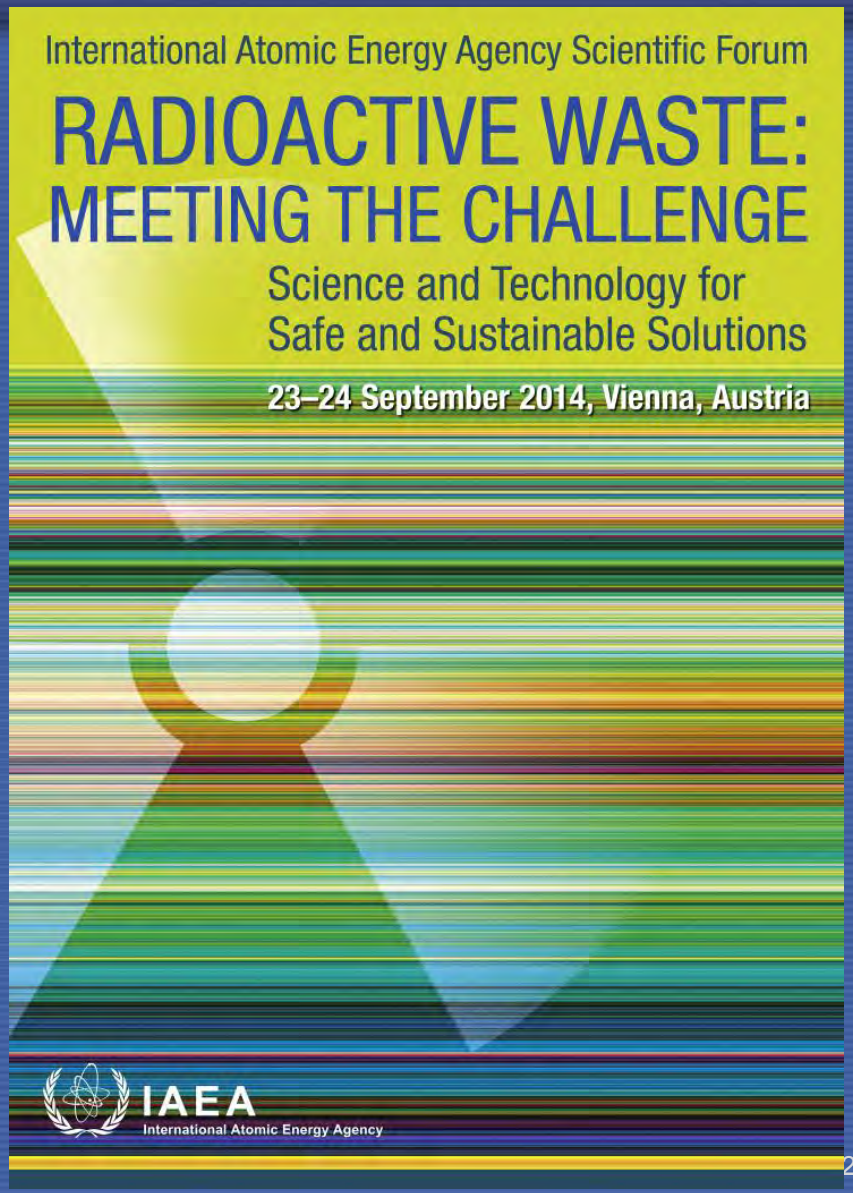
Radioactive Waste



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